

RoHS Compliant Product  
A suffix of "-C" specifies halogen & lead-free

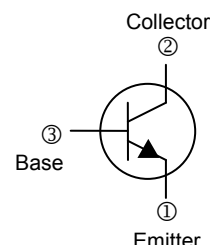
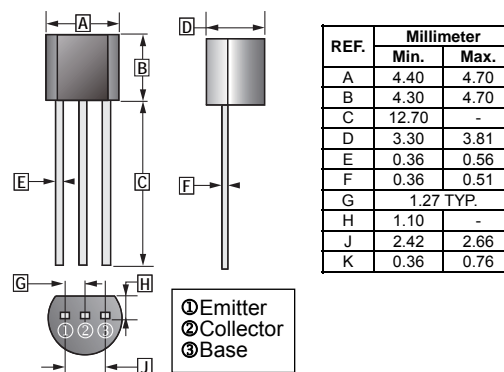
## FEATURES

- Power dissipation

## CLASSIFICATION OF $h_{FE}$ (1)

Product-Rank	2SD1616A-L	2SD1616A-K	2SD1616A-U
Range	135~270	200~400	300~600

## TO-92



## ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	$V_{CB0}$	120	V
Collector to Emitter Voltage	$V_{CEO}$	60	V
Emitter to Base Voltage	$V_{EBO}$	6	V
Collector Current - Continuous	$I_C$	1	A
Collector Power Dissipation	$P_C$	750	mW
Junction, Storage Temperature	$T_J, T_{STG}$	150, -55~150	$^\circ\text{C}$

## ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	120	-	-	V	$I_C=10\mu\text{A}, I_E=0$
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	60	-	-	V	$I_C=2\text{mA}, I_B=0$
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	6	-	-	V	$I_E=10\mu\text{A}, I_C=0$
Collector Cut - Off Current	$I_{CBO}$	-	-	0.1	$\mu\text{A}$	$V_{CB}=60\text{V}, I_E=0$
Emitter Cut - Off Current	$I_{EBO}$	-	-	0.1	$\mu\text{A}$	$V_{EB}=6\text{V}, I_C=0$
DC Current Gain	$h_{FE(1)}$	135	-	600		$V_{CE}=2\text{V}, I_C=100\text{mA}$
	$h_{FE(2)}$	81	-	-		$V_{CE}=2\text{V}, I_C=1\text{A}$
Collector to Emitter Saturation Voltage*	$V_{CE(sat)}$	-	-	0.3	V	$I_C=1\text{A}, I_B=50\text{mA}$
Base to Emitter Saturation Voltage*	$V_{BE(sat)}$	-	-	1.2	V	$I_C=1\text{A}, I_B=50\text{mA}$
Base to Emitter Voltage*	$V_{BE}$	0.6	-	0.7	V	$V_{CE}=2\text{V}, I_C=50\text{mA}$
Transition Frequency	$f_T$	100	-	-	MHz	$V_{CE}=2\text{V}, I_C=100\text{mA}$
Collector Output Capacitance	$C_{ob}$	-	-	19	pF	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$
Turn on time	$t_{on}$	-	0.07	-	$\mu\text{s}$	$V_{CC}=10\text{V}, I_C=100\text{mA}, I_{B1}=-I_{B2}=10\text{mA}$
Storage time	$t_S$	-	0.95	-		
Fall time	$t_F$	-	0.07	-		

\*pulse test:  $PW \leq 350\mu\text{s}, \sigma \leq 2\%$ .

**CHARACTERISTIC CURVES**

